

THE EARLY STAGES OF *ELACHISTA NOBILELLA* ZELLER (LEP.: ELACHISTIDAE)

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Abstract

The mine, larva and pupa of *Elachista nobilella* are described.

Introduction

Collins and Porter (2005) added *Elachista nobilella* to the British list on the basis of adults caught at two sites in Surrey. In that paper it was suggested that Wavy Hair-grass *Deschampsia flexuosa* was a likely foodplant as it is amongst several species mentioned in the literature and also the dominant grass species at the main site where the adults had been taken.

This site was visited on 11 April 2005 and mines were soon found on *Deschampsia*. Some had already been vacated despite the relatively early date. A number were taken for subsequent examination and adult moths reared to confirm the species involved. From eight mines kept, six pupae were obtained, all of which hatched. No parasitism was observed.

The mine

The mine of the mature larva commences 5-10 mm below the leaf-tip and extends up to 80 mm where the leaf allows. It occupies the whole "width" of a blade of *Deschampsia*. The full-grown larva is at least as wide as the diameter of the blade and the whole of the mesophyll is eaten with the exception of a narrow linear area which lies alongside an invagination of the blade wall. The mine posterior to the larva is silvery-white with the frass deposited in a fairly straight line down one side. The yellowish colour of the larva is visible through the mine, and since the fully grown larva is wider than the blade, the mine is swollen at this point. Mined leaves are thus distinct from leaves in which the apex of the leaf has died and become brown.

Unlike most leaf-miners, elachistid larvae can, and when feeding on narrow-leaved grasses probably routinely do, change leaves. The mines found had distinct entrance holes at the upper end and it is very likely that the larvae had mined other leaves first. The oviposition site and overwintering stage have not yet been established.

The Larva

The description of the larva is based on examples that had left the mine to pupate. Body whitish-yellow. Head pale brown, rather rounded, only slightly longer than wide. Crotchets of prolegs black, and segments of thoracic legs marked darker, visible through the mine. Prothoracic plate weakly sclerotised, pale brown, divided into four areas, the anterior pair elongate and diverging posteriorly, the posterior pair more rounded and transverse. The plate finely longitudinally striate.

The Pupa

3.0—3.2 mm long, uniformly pale yellowish-brown. Thorax with dorsolateral raised ridges, and three raised, roughened tubercles at the bases of the wings. Wing-cases and legs extending to apex of abdominal segment V, the former roughened but without distinct tubercles. Abdominal segments fused, except for the articulation between IV and V, and V and VI which is present as a deep dorsal sulcus. Prominent raised dorsal and prominent lateral keels present, interrupted by the sulci between the movable segments. Cremaster of four groups of spines ventrally on IX-X, the spines rather long and abruptly expanded at their tips. Caudal projection of X small, wider than long. The surface sculpture of the abdominal segments consists of a mixture of whorled wrinkles and areas of dense punctation, the surface between the punctures rather smooth and shining.

In captivity the larvae chose to pupate in an angle of their container, spinning a full length, transversely arranged sheet of silk above them, and attached by the cremaster and a girdle which engages with the dorsal sulcus between IV and V. This mode of pupation suggests that the larvae do not pupate on the stems of *Deschampsia*, but rather seek out some broader and flatter surface, perhaps on a dead leaf below the grass.

References

- Collins, G. A. & Porter, J., 2005. *Elachista nobilella* Zeller, 1839 (Lep.: Elachistidae), a micro moth new to Britain. *Entomologist's Record & Journal of Variation* **117**: 133-137.

First record of a grasshopper, *Myrmeleotettix maculatus* (Thunb.) (Orth.: Acrididae), from the Isle of Lewis

Surprisingly, according to the national atlas (Haes, E. C. M. & Harding, P.T. 1997. *Atlas of grasshoppers and allied insects in Britain and Ireland*), there are no records of grasshoppers from the Isle of Lewis, even though it is the largest of the Hebridean islands. On 25.vii.2006 I found numbers of *Myrmeleotettix maculatus* (Thunberg) at the boundary of dunes and machair, north of the beach at Mangersta (O. S. grid reference NB 009310) and a single male to the south of the beach in dunes at NB 009308. This species is already well known from other islands in the Hebrides. My own records include: Tangasdale, Barra, dunes, viii.1981; Ruleos, Barra, dry peat moor, viii.1981; Iona, dunes, viii.1984; Loch Aineort, South Uist, peat moor, 22.vii.2006; Udal, North Uist, machair, 23.vii.2006. It is possible that the Mangersta site represents an isolated population as much of Lewis is covered by damp exposed moorland that may be unsuitable for this insect. On a previous visit to Lewis, in 1988, I failed to find grasshoppers despite searching dune and machair areas near Uig Sands, Cliff and Kneep.— JOHN PAUL, Downsflint, High Street, Upper Beeding, West Sussex BN44 3WN (E-mail: turbots@btinternet.com).